

INTERVIEW -

BRIG. B.F. HUSSEY (Maternal Uncle of Barbara King)

BY COL. M.A.S. WILLIAMS

Start of Side A

Taped in June, 1981

FH the end of 1932 I was posted to Perth, the only time I served in Western Australia in the Army, although I am a West Australian. I was here nine months as the Adjutant of 13th Field Company and Staff Officer of technical units in Western Australia and after nine months in that posting I was transferred into a secondment with the Department of the Interior and spent the next nine months or so in Sydney and then moved over to Rottnest Island to look after the construction of the defences there. This was early 1935.

MW Can I just interrupt you there and ask a question. In 1933 it's reported that there were surveys carried out on the island for the actual location of the two batteries, one at Bickley and one at Oliver's. Who would have done those surveys?

FH I'm not sure who did the surveys but it would be, I think, the Survey Unit, in fact, if we look at this map this probably gives us a clue as to who probably did it. If you see the top line there and read that, they were probably the people who did it I think.

MW Well this says triangulation by 4th Australian Field Survey Company RAE. It puts a date on it, but not until later, 1941.

FH Yes

MW But the original work must have been done before then presumably?

FH Yes, it would have been, but I think it would have been by the Army Survey people. Incidentally, in 1933 General Sir Talbot Hobbs and Colonel Whitelaw and Major Payne, a Staff Corps Officer, and I, went to Rottnest on the Lady Forrest, which was the Customs Vessel, and we selected the sites. I went over as Engineer Adviser but the whole idea

FH cont.. of the reconnaissance was to select sites for the two batteries over there. On the way back the sea was very rough and unfortunately this made General Hobbs very seasick and he never recovered. He went on a trip overseas and died on it shortly afterwards. That was his last contribution to Army and it was about March 1935 when I returned to Rottnest Island and things started happening.

MW Now at that time March 1935, one presumes that the surveys were complete and a certain amount of design work on the structures had started.

FH Yes. That is so. Various things had happened. The Public Works Department of Western Australia had started work on design of lengthening and strengthening the main jetty in Thomson's Bay, and in Sydney as a result of the contour surveys that had been done, contract documents had been drawn up, or were in the process of being drawn up, for the railway line, and shortly after I arrived the Public Works Department started work on the jetty and my first job was looking after that and setting out the centre line of the railway line. In doing this we redesigned it to obtain the most economical location with regard to earthworks and after the line was pegged the contract was let by the Department of the Interior in Perth and I supervised the construction of the railway line. Strangely enough, although the earthworks were extensive the difficulty of getting equipment here was very great and practically nothing was used except tip trucks and nearly all the excavation and fill was done by shovelling and tipping on the site.

MW So there was no mechanical equipment used at that time, it was all pick and shovel work?

FH No...

MW And was the pick and shovel work done by Army personnel ...

FH Oh no, this was a contract let to a chap by the name of Oldham. He's been dead for quite a long while. He got the first contract for the construction of the railway line.

MW And all the materials for the railway line would have to come across on barges from Fremantle?

FH Yes. With regard to that all the rails and the fittings were recovered from the Naval Base a few miles south of Fremantle and that was a part of the contract, to pick up the rails there and, practically, the new materials were mainly sleepers. We just used the local sand for ballast and all the fittings and turnouts and points and fish plates, they were recovered and the rest of the things, like bolts, we got from the Western Australian Government Railways; but several different types of rails were used, I think that there were two, 36½ pound and 35 pound came from the Naval Base and we bought secondhand rails to make up, from the Western Australian Government Railways but the bulk of the material was recovered from the Naval Base.

MW Would you have any idea how old the rails would have been at that time? Would they have been in the Naval Base for some considerable time?

FH I should say thirty or forty years.

MW The reason I ask is that when I was talking to Mr. Taylor at lunch time today he was saying that any rails that are still in position on the island are all rusting away very rapidly, on the flanges particularly.

FH Yes well they were fairly old and when we augmented by buying from the Western Australian Government Railways we bought secondhand rails and we also used some very crude rolling stock that came from the Naval Base; it was just wood with very crude axles and wheels and the axles just fitted in inverted U's and we threw grease into them. We used them quite a bit with probably a lot of the timber replaced, but that was used quite a lot in the use of the railway. Incidentally all transport on the island was by rail. There was no road at that time into either of the batteries and we were responsible for the movement of all of the Contractor's materials.

MW When you say you were, that is the Fortress Company, is it?

FH No, I was seconded to the Department of the Interior and just two Sappers - one was Sapper Martin and the other was Sapper Wilkins - were given to me as Loco Drivers.

MW I wonder if we can just stop at this point. I'll just reel this tape back so that you can get an idea of what we're about ...

MW Right, well I think we can go on now. Would you like to carry on.

FH When I arrived over at Rottnest the only thing I can remember had been constructed was that a well had been put down just near Bickley Swamp. It was in limestone and wasn't very good in that it only produced about 80 gallons of water per hour. Later on we made this well which was probably about fifteen feet deep and had about four feet of water in the bottom about three times as long in other words it became probably about 12 feet by 4 feet. It still didn't make any more water but it made it more convenient for pumping because of the larger capacity of storage at the bottom. But it never was a plentiful source of supply and later on we went elsewhere for our ground water supplies.

MW Now the water generally on Rottnest as I understand it has been a problem. Most of the water that they use now is collected from surface water or else it is brought over by barges from the mainland I think. Have they ever had a very successful bore on the island.

FH I believe that now, in the last couple of years, they have found quite a lot more water. I've only seen it written up in the paper but I believe it is far more satisfactory now than it used to be.

MW One of the questions that I wanted to ask was this question of, amongst other things, the resupply to the people on the island of water, and later on of course rations and ammunition and so on but initially you had this fresh water supply from this well that you've just been talking about.

FH Yes. That really was not enough to serve any useful purpose in the long run and talking about water supply the first good supply was found by the Contractor for the 9.2 battery in a little quarry that he had for the limestone, which fortunately was quite close to the railway line, and the workmen dug out a little hole when the excavation got down to the water level and they used to get their water for their cups of tea from this and it was the purest water I've ever seen on the island, other than rain water, and it was rather extraordinary that when you pumped the water, instead of its quality deteriorating the quantity diminished, and we were very excited when we first pumped it we got about 3000 gallons an hour with a big Army hand-operated pump but we found that after pumping a few hours we could only pump at about 150 gallons an hour in the summer time,

FH in other words there was big local storage underground that fed it and
cont.. as you pumped, that diminished. But that well was the only one like
that. The others, usually, when you pumped too hard, the water became
more saline.

MW So at this time there was you, and you were a Lieutenant at that time,
or a Captain?

FH I was a Lieutenant just for a few months and then my Captaincy became
due.

MW And you had only two Sappers with you at that stage?

FH No, I had a Gunner as my Batman. I had two horses provided by the Army
and I had a Groom and a Batman, Jim Holmes, who was a Gunner.

MW I see. And whereabouts were you quartered?

FH Well I just stayed initially at the Hostel, and later on I moved out
into quarters at the Lighthouse. The Lighthouse had been made automatic.
Instead of having three Lighthouse Keepers they only had one, and I moved
into one of the quarters and Holmes and Martin and Wilkins moved into the
other spare one.

MW Now which Lighthouse was that, the original Lighthouse or the one at
Bathurst Point?

FH The big main Lighthouse.

MW So at this stage then we've reached a situation when the railway was being
constructed from the jetty up to where the gun positions were going to
be and at this stage there was no contractual work going on on the actual
positions themselves because they were going to require the railway to
get their materials up onto the site.

FH Yes. That was so, and there was a big triangle that's shown on the map
where it ran into the Bickley Barracks Site, but the extensions to Bickley
Battery (the six inch battery), and the end extensions up in the Oliver's
Hill area were done by day labour later on. This particular day labour
gang had lots of very interesting sapper tasks and it would have been nice

FH Cont.. if one had had some Sappers for that, but in actual fact I managed to keep on the same gang of day labour people. It was done on an employment relief arrangement where you were supposed to employ people for a fortnight and then sack them but we managed to evade that through being on the island, and saying that they had to learn their skills, and we kept the same gang right through.

MW This was PWD day labour?

FH Yes it was probably just a general State Government method I wouldn't say it was PWD, it was just a general Government Relief Fund for looking after unemployment.

MW Approximately how many fellows would you have had working for you?

FH I should say about fifteen or so.

MW And they were camped on the island?

FH Yes. They lived mainly in the Hostel. Some definitely lived under canvas and the Foreman that we had was quite an experienced railway builder. He had worked for the Contractor who built the railway and he stayed on and was Foreman for the day labour gang.

MW Right, now we've got up now to round about 1936-37. You started building the forts, according to the things that I've been able to read, around about 1936.

FH Yes. I think there was just over a year allowed for the construction, but the completion date would have been about October 1937 so it would have started in the first half of '36 and more or less at the same time the Barracks and Quarters in Bickley and a couple of them up near the Oliver's Hill area were started.

MW Now again all this is stuff that I've picked up in bits of reading that I've done. It's reported that in 1937 5 Fortress Company arrived on the island.

FH Oh. Well that would have been the crowd under Warrant Officer Lake. What was the date?

MW 1937. That's something I've got to research a bit more.

FH Well it would have been moderately early in '37 because I left at the end of '37 and they were well and truly installed there and that was the crowd I mentioned under Warrant Officer Lake, and Warrant Officer Lake died very suddenly and unexpectedly, there wasn't an Officer with it, he was in charge of the party, but I didn't know what the Unit identity was.

MW No. Would you be able to remember approximately how many men there would have been with Sar'Major Lake?

FH No I wouldn't.

MW And they were essentially Sapper Tradesmen, presumably?

FH Yes, they would be.

MW And would they have brought anything other than carpenters and joiners tools with them, would they have had any equipment with them in the way of wheeled compressors or

FH I don't think so, because their main tasks were the installation of the two large 6 cylinder Ruston Hornsby generator sets in the 9.2 Powerhouse and I think there were two A-C alternators in the Bickley Barracks for the service of all the installations around Bickley.

MW So essentially there would be a bias amongst them towards electrical trades, one would presume

FH Yes, electrical and mechanical. It would have been almost entirely electrical and mechanical work they were doing.

MW Yes. So just to recapitulate, it would appear that whilst there was some engineer involvement in the building of the railway

FH Not in the building of the railway.

MW In the surveying of the railway ...

FH No, as a matter of fact, Jim Holmes acted as Chainman for me quite a bit and I probably had to get an odd bod from somewhere else, but Martin and Wilkins drove the locomotives.

MW So the actual construction of the railway was done by the day labour gang?

FH No, by contract.

MW By contract. What did the day labour gang do then?

FH Oh they did a lot of extensions. As I said they built the branch line out to Bickley and the extension to Oliver's Hill and extensions to the quarry for the Contractor. A very large problem was to stop the embankments blowing away and that wasn't included in the Contract and what we did was peg down lots of ti-tree, and after trying various other things we found that by far the best thing was the Rottnest Daisy, to get that growing on the banks.

MW Yes. And when they came to build the actual forts themselves, the underground chambers, the tunnels, the actual emplacements, that was all done by contract?

FH That was done by another contract. The contract documents were drawn up in Sydney and they were let by the Perth Office of the Department of the Interior, and an interesting part about it was that an Englishman got the contract and some of the people who had built the 9.2 forts in Sydney were competing but the Perth tender was I think four pounds less than the next tender, which looked a bit fishy particularly as the tenders from Sydney I think arrived by telegram and the Department of Interior Office was on the floor below the PMG office. I think that people thought that there might have been a leak.

MW Right. Well, that's very interesting. Now we're getting to the stage now where the forts are built, the guns are to be installed. Are you still on the island at this stage?

FH Oh yes. When I left, the 9.2 guns were being installed and there were various interesting points with regard to that, and the 6 inch Battery I think was just starting but we had built the railway line up to the site and all the setting out for the 6 inch Bickley Battery had been completed.

MW The indication here is that the guns on Oliver's Hill, that is, the 9.2's were commissioned in 1938 and the 6 inch guns at Bickley went into use just before the outbreak of war in 1939.

FH Yes, well I left at the end of 1937 and the installation of the 9.2's was well under way. With regard to that there were various interesting factors. For instance when the jetty was lengthened and strengthened a dolphin was built about 30 feet on the Fremantle side of the jetty and the whole idea was that we would erect a gantry from the dolphin to the jetty and all the gun parts were vertically lifted by the gantry crane which was just hand operated and then moved across and dumped down onto either railway trucks or locomotive bogies on the railway line.

MW Now you'll have to forgive my ignorance but what exactly is a dolphin?

FH Well a dolphin is this structure was a square piled structure only about 10 feet square and its sole purpose was to support one leg of the gantry crane and the other leg was supported on the jetty and the beams across were two box-type braced girders. On them a little trolley holding a winch ran across, so that we lifted the loads vertically, moved them across by hand on the trolley and then they were vertically dumped down onto the line. The railway line ran right to the end of the jetty.

MW So in fact the dolphin would be far enough on the seaward side of the end of the jetty to allow the barge to go in between.

FH Yes. And of course the gantry crane went to the far side of the jetty so it also spanned over the railway line. One of the features of this gantry - tenders were let for it in Perth and they were let for the supply and erection, but no-one tendered for erection so I was given the task of erecting it and the Gunners provided a working party. I asked for an NCO and 12 men I think, and they were provided to me to erect the gantry.

MW By this time the Gunner troops were actually on the island were they, or did these troops come from the mainland?

FH They came from Fremantle specifically for the purpose. The Gunners wanted to do the job themselves with two Officers and I think they were going to have 35 men, in a month, but I asked for an NCO and 12 for a fortnight.

MW And you did it in the time?

FH Oh yes, we did it in the time. The work was very interesting then. It would have been very nice to have Sappers on that job, but they worked very well. One of the things that had to be done was that we had to erect this thing without interfering in any way with the daily deliveries of materials. There were usually two barges. The Contractor lent me big oregon timbers, twelve by sixes or thereabouts, to make a sort of meccano set thing that laid down flat on the jetty and was erected then in about 5 minutes, and it had arms out, on which the four main girders which later, with bracing added, formed the two box sections that went across from over the dolphin to over the jetty. And all of these had to be put in in the right way, I know that they couldn't the first time the barge brought them over, they hadn't loaded them properly and they had to come back and lift them up again and swing them round and put them on the other side. But it all went off very successfully and probably took less time than any of us expected.

MW You were just working to drawings supplied by people who had built the framework, were you?

FH Yes. One thing that happened was the construction of the dolphin and the lengthened jetty hadn't taken into account the bearings of the legs of the gantry crane and I reckoned that the best way to solve this was that I brought two large jarrah timbers for the jetty, they were twelve by twelves in cross section and probably about sixteen feet long and they just sat on the deck bolted down and distributed the load because the supports weren't in the right spot and on the dolphin I had one big eighteen by twelve jarrah baulk.

MW Who was supplying you with all these materials? Did you have to indent on some Depot somewhere on the mainland for them?

FH Well the Department of the Interior would have just bought them out of funds provided for the project. You see, the Department of the Interior did the job but now the Commonwealth Works Department which is always changing its name, it grew out of this thing that did the work. I remember one rather humorous thing that cropped up. They had just changed themselves from Department of Works and Housing to Department of Works and one of my Officers kept on calling it the Department of Works and Housing and he was corrected by this civilian officer and he

FH said we're now the Department of Works. We've cut out the Housing
cont.. and the reply was "You should just call it, the Department".

MW What were the communications between the island and the mainland at
that time? There was a telephone line across?

FH Yes. There was a telephone - not a very good one - but that was all
there was, yes.

MW You would be able to contact the Department of Interior on the mainland
whenever you wanted some sort of supply material?

FH Yes. We didn't ever seem to do anything in a hurry. I think, I mean
usually we foresaw what we would want and most of the problems were the
Contractor's problems and we didn't do much that required immediate
materials.

MW Did you maintain a small storeyard of your own of the island?

FH No, we didn't seem to have much of a requirement for that. We didn't
use materials much. I know we did quite a bit of road-building and
extending the railway line and of course there would have been sleepers
and points and rails there, and we arranged to keep plenty of those for
any work that we might have, but I can't remember ever being short of
materials, but I can remember some rather anxious moments that I'll tell
you about later on. But I think I should talk about the locomotives.
They were one of the first things that we had to have and they were
arranged by contract from Sydney and the first locomotive we got was
provided by the firm of Tomlinsons which is still going, and it was meant
to be converted from a four wheel drive truck built for the 1914-18 War
and ordinary locomotive wheels were put on it, but we had continuous
trouble with the front wheel drive. It had the usual steering mechanisms
on it that weren't required, and they kept on breaking and eventually I
threw that out and just put in rolled steel joists with plates welded onto
the ends, then we didn't have nearly so much trouble with it. I don't
think it affected its pulling capacity very much. Incidentally the
railway line had a grade of 1 in 40 on the straight. On curves it was
reduced, and there was a standard table for how much you had to reduce
the grade to give the same performance on the curves, and the line was

FH Cont.. super-elevated. That was a bit of a problem I had, to decide what super-elevation to use. On the way up, the locomotives travelled probably about 4 miles per hour with their loads, and coming down they travelled at about 15 miles an hour and when someone did something silly and a truck got loose it went down at about 60 miles an hour and it was somewhere about 4 miles I think, about 3 miles of flat followed by one mile of climbing at the ruling grade and if a truck got loose at the top it came to rest just about on the end of the jetty. It free-wheeled the last 3 miles after reaching the flat.

MW You mention that you welded some parts of the front end of the locomotive to make them more effective. Now, would you have welding equipment with you?

FH No. I think we probably got the Contractor to do that. As a matter of fact he used quite a lot of welding. On his own suggestion, all the roofs which were made out of steel troughs alternately placed one way up and then the other way and they were meant to be drilled and bolted together and on top of them was about 7 ft 6 inches of reinforced concrete and that was meant to be based on vertical roads. The roof was supposed to be drilled and the rods threaded with a nut top and bottom. Well this would have been a source for leaks, and the Contractor asked if, instead of doing that, he could spot weld the rods onto the top of the "channels" (they really were), steel channels, and that they be welded together with lap welds both inside and outside. This made a greatly improved thing which was far less likely to leak and we probably got him to weld these plates on and drill the holes. We might have done that or we might have got them done down at the Railway Workshops at Midland Junction, I'm not sure which we did. Probably it was done on the mainland because the RSJ would have been from there.

MW Did you have any water transport specifically allocated to you, or would you, in wanting to take something back from the island, to the mainland, have to use an empty barge?

FH Well, as far as any material went, the only two things that came to the island were The Duchess and The Agnes. The Duchess was owned by Tilley and I can't remember the name of the owner of The Agnes. The Agnes was the one that brought the gun equipment over, but they brought all the materials to the island except little things that could come on a launch. In the summer time the Zephyr came over, mainly for the tourist

FH trade, and in the winter time Tilley ran a little launch which wasn't
 Cont.. terribly good. I can remember being stranded half-way between Fremantle
 and Rottnest because a wave had broken the glass, wet the spark plugs
 and stopped the engine.

MW The ferries were still coming to the island during the whole of the
 time when the forts were being built? Was there any barrier put up
 to stop them coming too close, and see what was going on, or would
 they not venture in that direction anyway?

FH I don't think anyone regarded it as a thing you could keep secret, and
 we never had any trouble with people, but they probably wandered across
 and saw what they wanted to; but no money was spent on secrecy and I
 don't think anything really could have been kept secret.

MW The thing that impressed me when I was reading some of the reports was
 the accuracy with which they foretold the date when the forts would be
 needed. In fact the 9.2's were finished about 6 months before the
 outbreak of war, but the 6 inch Battery was finished I think in the
 September of 1939.

FH Yes. Well it was mainly I think, a political decision made in the quite
 early thirties on military advice and what strikes me as more peculiar
 is that by the time they were built, coast defences were just about then
 becoming outdated. Quite early in the war they took one of the beautiful
 Ruston Hornsby generating sets, which was 440-220 volt DC, and put it in
 the Northam Camp as the lighting set. It was probably over-insuring to
 have a standby set, and as they didn't have a lighting set for Northam
 Camp that is where it went. But as I mentioned in that little bit I've
 written for the Corps History, the only one of the Coast Defences that
 was built at this time that could have fired a shot in anger was at
 Rabaul and the Japs knocked it out, the day before they landed, by aerial
 attack.

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FH There was an obvious naming for the two locomotives. The first one, as I say, was based on a four wheel drive truck and we couldn't turn it round except by driving it round the triangle. That turned it round. It went up, forwards or back in reverse, or vice versa, it didn't matter. I think the ratio was the same in both directions. But as it moved backwards with great alacrity that was named The Crayfish. But the second locomotive was based on a petrol Malcolm Moore tractor and the normal steel tractor feet stuck out on one side of the rail and the radiator on the other side, and so the chap looked to his left going one way and to his right going the other way. As this appeared to go sideways it was called The Crab.

MW There was never any idea that you might build a little turntable for the locomotives. Would it have made it any easier to do that?

FH No. It would have made practically no difference to the Crab, and the Crayfish went equally well in both directions and it would have been, if there was any difference, it would probably have been better to have it going forward uphill and backward downhill, but it didn't make much difference and if it had, we could have got it in reverse by just putting it round the triangle and that probably would have been quicker than anything else. One innovation we did put on the railway line, that was my Foreman that I'd inherited. His name was Nat Powell, he put slip points on the railway right up near Oliver's Hill because of the danger of trucks getting loose and coming down. They did, on one or two occasions but fortunately there was never anything coming up and we didn't ever have an accident. We had another little motor trolley later on, The Kalamazoo, and I believe that after I left and the Gunners took over they had a nice little accident when the two locomotives came together with the Kalamazoo in between. But I was lucky while I was there, but the main reason was that we found that one loco did most of the travelling and the other one got everything ready for it, either at the bottom or the top, and as it was a single track the difficulties of having to cross never occurred.

MW There was no need to have any sort of signalling?

FH No. We found that that dealt with the requirement quite well and we had sufficient trucks for them to be being loaded up on the jetty and could leave them up the top.

MW Do you know approximately how many trucks you had at that time, because I hear that now all they can find are the rotting remains of two.

FH Well, yes, I think we only had two proper trucks but remember I mentioned that there were some funny looking things - the friction was fairly great - we found them down at the Naval Base and they just had inverted cast iron U's which sat on top of the axles, and we probably had about twenty of those, and either two or three proper trucks that I think we bought from the Western Australian Government Railways.

MW And these ones you got from the Naval Base, the twenty odd, you were using those?

FH Yes, we were using those quite a lot.

MW Did you work out a regular maintenance pattern for them? I suppose if it was as crude as having a U on an axle you'd have to watch out for lubrication.

FH Yes. It was very simple of course. All you could do was to push grease on it and that was done quite regularly. It never introduced any problems. You could see everything and I think you'd see smoke if it needed greasing.

ME The two locomotives would be petrol-engined of course?

FH Yes, they were, both petrol.

MW And how did you store petrol? Did it come over in jerricans, or 44 gallon drums

FH It came over in 44 gallon drums and we had our own bowser with an underground tank and we put it into these.

..... short break

FH Yes, the operation of the railway line was always quite successful. We did some rather interesting things at the far end. We made a very steep line. I know we had to bring a curved line off the inside of a curve. That was to provide materials down to the Power House. And there was a second line into the Power House, which went into a tram line of

FH about, I think, between twenty and thirty degrees angle, and we put
 Cont.. a little balance line. I don't think we have the specific length of the
 balance line. We had a pulley with a two to one reduction and that
 worked very well because the materials were always going down, and a
 truck would come along with the locomotive and I think the locomotive
 could pull itself up so we didn't need to unhook the locomotive but we
 hooked it up to the balance weight and that meant that the truck and the
 locomotive would go down and pull the balance weight up and the locomotive
 could get itself up without any load and it went off, and when the truck
 was empty all you had to do was to release the brakes and the balance
 weight would pull it up again. That's how we provided the materials right
 to where the Contractor needed them. Both those lines are shown on this
 map, which was done subsequently. You can see, there are no roads at
 all leading into the 9.2's. A rather interesting feature there ...
 I can remember the winds blew very badly. They had land and sea breeze
 that were quite strong. The Contractor had done all the earthworks for
 the part right out near Oliver's Hill and we'd come round quite a big
 hill feature and then there was an embankment and when I went to re-survey
 the centre line of the railway line the bank wasn't in the right place at
 all, the sand had been removed from one side and blown over to the other
 side. The Contractor said he wasn't going to do anything about it, he'd
 put it in the right place. I got my Day Labour gang to just peg down
 ti-tree on the side that had disappeared and in a couple of days that
 was buried and we put down a second lot and that got buried, and instead
 of having an embankment about 12 feet wide at the top we had one about
 30 feet wide and part was in the right place to put the railway line on.
 But it didn't involve much at all, but the way we made the railway line bank
 was to peg down ti-tree. There was any amount of it on the island; then we
 tried various things including Rottnest Daisy. None of them would grow in
 the local sand. The sand was not sand. It wasn't very good for the
 concrete. It was in fact broken-up shell. On the railway line they had
 prices in the priced vocabulary for excavation in limestone and excavation
 in sandstone and the Contractor put in two very different prices; then as
 it was all 98% Calcium Carbonate, some of it was hard and some of it was
 soft. I think his limestone was a higher price so if it was hard I
 called it limestone and if it was soft I called it sandstone and there
 wasn't much argument, they agreed to my payments. One thing that upset
 them a bit was that they'd been cutting into an embankment and the sand
 stood up steeper than was allowed for in the Contract, and the Contractor
 took advantage of that, or thought he'd taken advantage of it, by just
 putting it at the angle of repose, but he didn't know that I was going to

FH measure it up and he got paid considerably less than he thought he
 Cont.. was going to be, because I measured it regularly in cross sections
 and that's what he got paid for.

MW You mentioned that the sand was really not sand, it was really just a
 sort of dessicated shell, were they in fact using that for their
 concrete?

FH Yes, they did tests on it, and the strength wasn't nearly as great as
 with the Standard Nepean sand that I'd always been used to, (but that
 was probably just New South Wales) but this was considerably below the
 strength of Standard Nepean, and less than the sand we could have got
 from the mainland, but we reckoned it would be better to put a bit more
 cement in than to go to the cost of importing sand. It made quite good
 concrete.

MW At this stage there was no preparation being made, presumably, to put in
 any defence positions around the guns. This all came later after the
 war started, presumably, when the guns had to be defended by, presumably,
 infantry parties?

FH Yes, I can tell you rather an amusing story about that. Shortly before
 I left, an Infantry Battalion decided to make part of its training an
 attack on the 9.2 Battery with a landing on Rottnest Island.

MW This would be a Regular Battalion would it?

FH No. CMF. And another battalion agreed to provide a company as the
 enemy, the defenders, and they got together - the story was that the
 attackers wanted to make sure that they had some real fighting and they
 said that one company couldn't hope to defend the 9.2 Battery round
 360 degrees, so they decided - they had a mutual agreement - that the
 attack would come up the railway line. Well, some of the bright attackers
 got hold of my loco and a couple of trucks and filled them up with troops
 and put a tarpaulin over them and drove up through the defenders waving
 brightly as they went through, and the defenders thought that they
 couldn't interfere with the construction that was going on. They did
 nothing, and the locomotive went up to one gun and put off its party and
 then backed back to the points, as you'll see from the map they had to do,
 then went up to the other gun and put off the rest of the party and they
 didn't have their skirmish. But it was such a good thing - when war did

FH break out it was that sort of quisling action. It was rather humorous
Cont.. that they should do that.

MW After the war started they did have at least two companies of infantry
on the island as ground defence for the guns.

FH Yes I can't help at all in that. I do know there were quite a lot of
troops there and one of the effects of these troops on the island during
the war was that you couldn't catch crayfish on the reefs after the war,
the Army had made a welter of it and the crayfish had learnt their lesson,
they didn't come up and feed on the coral reefs anymore.

MW I think I shall talk about the war a little bit more.